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China and Proliferation of Weapons of Mass Destruction and Missiles: Policy Issues

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China and Proliferation of Weapons of Mass Destruction and Missiles: Policy Issues

Summary

Congress has long been concerned about whether U.S. policy advances the U.S. interest in reducing the role of the People's Republic of China (PRC) in the proliferation of weapons of mass destruction (WMD) and missiles that could deliver them. Recipients of China's technology include Pakistan and countries that the State Department says support terrorism, such as Iran, North Korea, and Libya. This CRS Report discusses the national security problem of China's role in weapons proliferation and issues related to the U.S. policy response, including legislation, since the mid-1990s. A table summarizes the U.S. sanctions imposed on PRC entities for weapons proliferation. This CRS Report will be updated as warranted.

Since 1991, China has taken some steps to mollify concerns about its role in weapons proliferation. Nonetheless, supplies from China have aggravated trends that result in ambiguous technical aid, more indigenous capabilities, longer range missiles, and secondary (retransferred) proliferation. As the Director of Central Intelligence (DCI) has reported, China remains a "key supplier" of weapons technology — particularly missile or chemical technology.

Policy issues in seeking PRC cooperation have concerned summits, sanctions, and satellite exports. On November 21, 2000, the Clinton Administration agreed to waive missile proliferation sanctions, resume processing licenses to export satellites to China, and discuss an extension of the bilateral space launch agreement, in return for another promise from China on missile nonproliferation. However, PRC proliferation activities again raised questions about sanctions. On 8 occasions, the Bush Administration has imposed sanctions on PRC entities (not the government) for transfers (related to ballistic missiles, chemical weapons, and cruise missiles) to Pakistan and Iran, under the Arms Export Control Act, Export Administration Act, Iran Nonproliferation Act, Iran-Iraq Arms Nonproliferation Act, and Executive Order 12938. Among the actions, on September 1, 2001, the Administration imposed missile proliferation sanctions denying satellite exports (for 2 years), after a PRC company transferred technology to Pakistan, despite the November 2000 promise. During preparations for the U.S.-PRC summit in October 2002 at Crawford, TX, China, on August 25, 2002, published the missile export controls promised in November 2000. With questions about China's enforcement of the regulations and reductions in proliferation activities, President Bush has not waived the sanctions imposed in September 2001. Moreover, on May 23, June 26, and July 30, 2003, the Administration imposed sanctions on PRC entities for missile proliferation, signaling U.S. frustrations with China. China's cooperation is also sought on North Korea.

The 107th Congress enacted the FY2003 Intelligence Authorization Act (P.L. 107-306) with Section 827 (inserted by Senator Thompson) to require the DCI to submit annual reports on PRC and other foreign companies that are involved in weapons proliferation and raise funds in U.S. capital markets. In the 108th Congress, the Senate's FY2004 Intelligence Authorization Act (**S. 1025**, passed as **H.R. 2417** on July 31, 2003) included Section 339(f) to repeal the above reporting requirement.

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China and Proliferation of Weapons of Mass Destruction and Missiles: Policy Issues

Purpose and Scope

Congress has long been concerned about whether U.S. policy advances the U.S. interest in reducing the role of the People's Republic of China (PRC) in the proliferation of weapons of mass destruction (WMD) and missiles and obtaining China's cooperation in weapons nonproliferation. This problem refers to the threat of nuclear, chemical, or biological weapons and missiles that could deliver them. Some have argued that certain PRC transfers violated international treaties or guidelines, and/or have contravened various U.S. laws requiring sanctions to shore up those international standards. Even if no laws or treaties are violated, many view China's transfers as threatening U.S. security interests. This CRS Report (superseding CRS Issue Brief 92056) discusses the national security problem of the PRC's role in weapons proliferation and issues related to the U.S. policy response, including legislation, since the mid-1990s. The table at the end of this Report summarizes the U.S. sanctions imposed on PRC entities for weapons proliferation.

For a discussion of the policy problem in the 1980s to 1996, see CRS Report 96-767, *Chinese Proliferation of Weapons of Mass Destruction: Background and Analysis*, September 13, 1996, by Shirley Kan. See also, by the same author, CRS Report 98-485, *China: Possible Missile Technology Transfers Under U.S. Satellite Export Policy — Actions and Chronology*.

PRC Proliferation Challenges

Nonproliferation Commitments but Continued Concerns

Since 1991, Beijing has taken steps to address U.S. and other countries' concerns by increasing its partial participation in international nonproliferation regimes and issuing export control regulations. However, questions have remained. China first promised to abide by the Missile Technology Control Regime (MTCR) in 1991-1992 and reaffirmed that commitment in an October 4, 1994 joint statement with the United States. The MTCR, set up in 1987, is not an international agreement and has no legal authority, leaving issues about U.S. sanctions to shore up the standards. It is a set of voluntary guidelines that seeks to control the transfer of ballistic and cruise missiles that are inherently capable of delivering at least a 500 kg (1,100 lb) payload to at least 300 km (186 mi), called "Category I" or "MTCR-class" missiles. It was unclear whether China adhered to the revised MTCR guidelines of 1993 calling for the presumption to deny transfers of *any* missiles capable of delivering *any* WMD (not just nuclear weapons). A 1996 Fact Sheet of the State

Department said that China unilaterally committed to controlling exports “consistent with the MTCR Guidelines and Annex,” with the MTCR consisting of a common export control policy (Guidelines) applied to a common list of controlled items (Annex). However, a Senate Foreign Relations Committee report of September 11, 2000, said the State Department argued to Congress that China agreed to the MTCR Guidelines, but not the Annex.

On November 21, 2000, Beijing said that it has no intention of assisting any other country in developing ballistic missiles that can be used to deliver nuclear weapons (missiles with payloads of at least 500 kg and ranges of at least 300 km) and promised to issue missile-related export controls “as soon as possible.” After a contentious period that saw new U.S. sanctions, the PRC finally published those regulations and the control list (modeled on the MTCR) on August 25, 2002, as Washington and Beijing prepared for a Bush-Jiang summit on October 25, 2002.

China acceded to the Nuclear Nonproliferation Treaty (NPT) on March 9, 1992. The NPT does not ban peaceful nuclear projects. On May 11, 1996, the PRC issued a statement promising to make only safeguarded nuclear transfers. China, on July 30, 1996, began a moratorium on nuclear testing and signed the Comprehensive Test Ban Treaty (CTBT) in September 1996, but (like the United States) has not ratified it. Premier Li Peng issued nuclear export control regulations on September 10, 1997. On October 16, 1997, China joined the Zangger Committee (on nuclear trade). On June 6, 1998, the U.N. Security Council (including China) adopted Resolution 1172, asking states to prevent exports to India or Pakistan’s nuclear weapon or missile programs. The PRC issued regulations on dual-use nuclear exports on June 17, 1998.

In November 1995, China issued its first public defense white paper, which focused on arms control and disarmament. Also, China signed the Chemical Weapons Convention (CWC) in January 1993. On April 25, 1997, China deposited its instrument of ratification of the CWC, before it entered into force on April 29, 1997. From 1993-1998, the PRC issued export control regulations on chemicals. On October 14, 2002, on the eve of a Bush-Jiang summit, the PRC issued regulations for export controls over dual-use biological agents and related technology.

Nevertheless, China is not a member of the MTCR, Nuclear Suppliers Group (NSG) (requiring full-scope safeguards), or Australia Group (AG) (on chemical and biological weapons). Although 93 countries signed the International Code of Conduct Against Ballistic Missile Proliferation in The Hague on November 25, 2002, China did not. PRC weapons proliferation has persisted, aggravating trends that result in more ambiguous technical assistance, longer range missiles, more indigenous capabilities, and secondary (retransferred) proliferation. The Director of Central Intelligence (DCI) noted that, for July-December 1996, “China was the most significant supplier of WMD-related goods and technology to foreign countries.” As required by Section 721 of the FY1997 Intelligence Authorization Act, the DCI’s semi-annual report, “Unclassified Report to Congress on the Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions,” has named China (plus Russia and North Korea) as “key suppliers” of dangerous technology. (Subsequent discussions of the DCI’s report refer to this reporting requirement.)

Nuclear Technology Sales to Pakistan

Ring Magnets. In 1996, some in Congress called for sanctions after reports disclosed that China sold unsafeguarded ring magnets to Pakistan, apparently in violation of the NPT and in contradiction of U.S. laws, including the Arms Export Control Act (P.L. 90-629) and Export-Import Bank Act (P.L. 79-173), as amended by the Nuclear Proliferation Prevention Act of 1994 (Title VIII of P.L. 103-236). On February 5, 1996, the *Washington Times* disclosed intelligence reports that the China National Nuclear Corporation, a state-owned corporation, transferred to the A.Q. Khan Research Laboratory in Kahuta, Pakistan, 5,000 ring magnets that can be used in gas centrifuges to enrich uranium. Reportedly, intelligence experts believed that the magnets provided to Pakistan were to be used in special suspension bearings at the top of rotating cylinders in the centrifuges. The *New York Times*, on May 12, 1996, reported that the shipment was made after June 1994 and was worth \$70,000. The PRC company involved was China Nuclear Energy Industry Corporation, a subsidiary of the China National Nuclear Corporation. The State Department's report on nonproliferation efforts in South Asia (issued on January 21, 1997) confirmed that "between late 1994 and mid-1995, a Chinese entity transferred a large number of ring magnets to Pakistan for use in its uranium enrichment program."

The Clinton Administration's decision-making was complicated by considerations of U.S. corporations doing business in China. Officials reportedly considered imposing then waiving sanctions or focusing sanctions only on the China National Nuclear Corporation, rather than large-scale sanctions affecting the entire PRC government and U.S. companies, such as Westinghouse Electric Corporation (which had deals pending with China National Nuclear Corporation) and Boeing Aircraft Company. At the end of February 1996, Secretary of State Warren Christopher instructed the Export-Import Bank to suspend financing for commercial deals in China for one month, reported the *New York Times* (February 29, 1996). Christopher reportedly required time to try to obtain more information to make a determination of whether sanctions would be required. Meanwhile, DCI John Deutch reportedly said at a White House meeting that PRC officials at some level likely approved the sale of magnets. Defense Secretary William Perry supported this view, but officials of the Commerce and Treasury Departments and the U.S. Trade Representative argued there was lack of solid proof, according to the *Washington Post* (April 1, 1996).

On May 10, 1996, the State Department announced that China and Pakistan would not be sanctioned, citing a new agreement with China. Clinton Administration officials said China promised to provide future assistance only to safeguarded nuclear facilities, reaffirmed its commitment to nuclear nonproliferation, and agreed to consultations on export control and proliferation issues. The Administration also said that PRC leaders insisted they were not aware of the magnet transfer and that there was no evidence that the PRC government had willfully aided or abetted Pakistan's nuclear weapon program through the magnet transfer. (Congress responded that year by adding language on "persons" in the Export-Import Bank Act.) Thus, the State Department announced that sanctions were not warranted, and Export-Import Bank considerations of loans for U.S. exporters to China were returned to normal. On May 11, 1996, China's foreign ministry issued a statement that "China will not provide assistance to unsafeguarded nuclear facilities." In any

case, China since 1984 has declared a policy of nuclear nonproliferation and requirement for recipients of its transfers to accept IAEA safeguards, and China acceded to the NPT in 1992.

Nuclear Cooperation. On October 9, 1996, the *Washington Times* reported that a September 14, 1996 CIA report said that China sold a “special industrial furnace” and “high-tech diagnostic equipment” to unsafeguarded nuclear facilities in Pakistan. In September 1996, PRC technicians in Pakistan reportedly prepared to install the dual-use equipment. The deal was allegedly made by the China Nuclear Energy Industry Corporation, the same firm which sold the ring magnets. Those who suspect that the transfer was intended for Pakistan’s nuclear weapons program say that high temperature furnaces are used to mold uranium or plutonium. The CIA report was said to state that “senior-level government approval probably was needed” and that PRC officials planned to submit false documentation on the final destination of the equipment. According to the press, the CIA report said that the equipment was set to arrive in early September 1996. The *Washington Post*, on October 10, 1996, reported that the equipment was intended for a nuclear reactor to be completed by 1998 at Khushab in Pakistan. On October 9, 1996, the State Department responded that it did not conclude that China violated its May 11, 1996 statement. However, the State Department did not publicly address whether the reported transfers occurred before May 11, 1996, violated the NPT, or contradicted U.S. laws (including the Arms Export Control Act, Export-Import Bank Act, and the Nuclear Proliferation Prevention Act).

Concerns have persisted about PRC assistance to Pakistan’s nuclear facilities. As reported by Pakistani and PRC news sources in 1992, China began to build a nuclear power plant at Chashma and was suspected in 1994 of helping Pakistan to build an unsafeguarded, plutonium-producing reactor at Khushab.¹ Operational since 2001, the Chashma reactor has IAEA safeguards but not full scope safeguards.² Referring specifically to Pakistan’s efforts to acquire equipment, material, and technology for its nuclear weapons program, the DCI’s June 1997 report for the last half of 1996 (after China’s May 1996 pledge) stated that China was the “principal supplier.” Then, on May 11 and 13, 1998, India conducted nuclear tests, citing China’s nuclear ties to Pakistan, and Pakistan followed with nuclear tests on May 28 and 30, 1998. China, as Pakistan’s principal military and nuclear supplier, failed to avert the tests and has not cut off nuclear aid, but condemned the tests at the U.N. The Arms Control and Disarmament Agency’s annual report on arms control for 1998 stated that “there continued to be some contacts between Chinese entities and Pakistan’s unsafeguarded and nuclear weapons program.”

In 2000, news reports said that some former U.S. nonproliferation and intelligence officials suspected that China provided equipment for Pakistan’s secret heavy water production plant at Khushab, where an unsafeguarded reactor allegedly has generated weapons-grade plutonium. Clinton Administration officials at the White House and State Department reportedly denied China’s involvement but said

¹ *Nucleonics Week*, June 19, 1997 and February 26, 1998.

² *Nucleonics Week*, April 26, 2001; IAEA Annual Report 2001.

that they did not know the origins of the plant.³ The DCI reported in April 2003 that the PRC previously provided “extensive support” to Pakistan’s nuclear weapons program and that, in the first half of 2002, “continued contacts” between PRC entities and Pakistani entities “on Pakistani nuclear weapons development” cannot be ruled out, despite the PRC’s 1996 promise not to assist unsafeguarded nuclear facilities.

Missile Technology Sales to Pakistan

M-11 Missiles. Transfers of the PRC’s M-11 short range ballistic missiles (SRBMs) or related equipment exceed MTCR guidelines, because the M-11 has the inherent capability to deliver a 500 kg (1,100 lb) warhead to 300 km (186 mi). Issues about U.S. sanctions have included the questions of whether PRC transfers to Pakistan involved M-11 missile-related technology (Category II of the MTCR) or complete missiles (Category I). Sanctions are mandated under Section 73(a) of the Arms Export Control Act (AECA) and Section 11B(b)(1) of the Export Administration Act (EAA) (as amended by the FY1991 National Defense Authorization Act).

In June 1991, the Bush Administration first imposed sanctions on entities in China for transferring M-11 technology to Pakistan. Sanctions affected exports of supercomputers, satellites, and missile technology. The Administration later waived the sanctions on March 23, 1992. On August 24, 1993, the Clinton Administration determined that China had again transferred M-11 equipment (not whole missiles) to Pakistan and imposed new sanctions (affecting exports of some satellites). On October 4, 1994, Secretary of State Warren Christopher and Foreign Minister Qian Qichen signed a joint statement, saying that Washington would waive the August 1993 sanctions and Beijing would not export “ground-to-ground missiles” “inherently capable” of delivering a 500 kg warhead 300 km. The Administration waived the sanctions on November 1, 1994.

However, contentious policy questions about imposing sanctions for the 1992 transfer of complete M-11 SRBMs (not just components) persisted until 2000. The *Washington Times* (March 14, 1997) said “numerous” intelligence reports indicated that M-11 missiles were “operational” in Pakistan, but these findings were disputed by some policymakers. Secretary of Defense William Cohen issued a Pentagon report in 1997 stating that Pakistan acquired “SRBMs” as well as related equipment from China in the early 1990s.⁴ In a 1998 report to Congress on nuclear nonproliferation in South Asia, the Department of State acknowledged its concerns about “reports that M-11 missiles were transferred from China to Pakistan” but added that it had not determined that such transfers occurred, “which would be sanctionable under U.S. law.”⁵ Gordon Oehler, former head of the CIA’s Nonproliferation Center, testified on June 11, 1998, to the Senate Foreign Relations Committee that in

³ Hibbs, Mark, “CIA Knew About Khushab D2O Plant But Not Source, Officials Claim,” *Nucleonics Week*, March 23, 2000; “Pakistani Separation Plant Now Producing 8-10 Kg Plutonium/Yr,” *Nuclear Fuel*, June 12, 2000.

⁴ Office of the Secretary of Defense, *Proliferation: Threat and Response*, November 1997.

⁵ Department of State, “Report on Nuclear Nonproliferation in South Asia,” March 17, 1998.

November 1992, “the Chinese delivered 34 M-11s to Pakistan.” In July 1998, the Rumsfeld Commission reported that China had transferred complete M-11s to Pakistan.⁶

Some said that sanctions were not imposed for transfers of complete M-11s, because the missiles remained inside crates at Sagodha Air Base, according to the *Wall Street Journal* (December 15, 1998). Critics, especially in Congress, said the Clinton Administration avoided making determinations of whether to impose sanctions, by delaying tactics, re-writing reports, and setting high evidentiary standards. The Senate Foreign Relations Committee issued a report in September 2000, saying that the Administration avoided such determinations through the use of “bureaucratic maneuvers” to delay the drafting of “Statements/Findings of Fact” by the intelligence community and to not schedule interagency meetings to consider those findings.⁷

On September 9, 1999, the intelligence community publicly confirmed for the first time that “Pakistan has M-11 SRBMs from China” and that they may have a nuclear role.⁸ However, the State Department argued on September 14, 1999, that it required a “high standard of evidence” and had not yet determined that Category I sanctions were warranted, despite the intelligence judgment. (Category I sanctions would deny licenses for exports of Munitions List items, among other actions, and Congress transferred satellites back to the Munitions List, effective March 15, 1999.) The *Far Eastern Economic Review* reported on May 18, 2000, that the Clinton Administration and Senator Helms of the Foreign Relations Committee struck a deal in 1999 that required a decision on sanctions for the PRC’s M-11 transfer to Pakistan in exchange for the confirmation of Robert Einhorn as Assistant Secretary of State for Nonproliferation (approved on November 3, 1999). On November 21, 2000, the Clinton Administration said it determined that PRC entities had transferred Category I and Category II missile-related items to Pakistani entities, and sanctions would be waived on the PRC for past transfers, given its new missile nonproliferation promise.

Missile Plants and MRBMs. While China promised not to transfer *missiles*, it has reportedly helped Pakistan to achieve an indigenous missile capability. U.S. intelligence reportedly concluded in a National Intelligence Estimate that China provided blueprints and equipment to Pakistan to build a plant for making missiles that would violate the MTCR, according to the *Washington Post* (August 25, 1996). Analysts disagreed, however, about whether the plant would manufacture some major missile components or whole copies of the M-11 missile. Construction of the plant allegedly began in 1995. On August 25, 1996, Vice President Al Gore acknowledged concerns about the plant. *Time* reported on June 30, 1997, that the Clinton Administration would not discuss possible sanctions based on intelligence on the missile plant. The November 1997 report of the Secretary of Defense also confirmed

⁶ Commission to Assess the Ballistic Missile Threat to the United States (popularly known as the Rumsfeld Commission), report, July 15, 1998.

⁷ Senate Foreign Relations Committee, “Chairman’s Overview of China’s Proliferation Track Record,” September 11, 2000.

⁸ National Intelligence Council, “Foreign Missile Developments and the Ballistic Missile Threat to the United States Through 2015,” September 1999.

Pakistan's facility "for the production of a 300 kilometer range ballistic missile." By 1998, the missile plant in Fatehjung was almost finished, awaiting delivery of crucial equipment from China, reported the *Wall Street Journal* (December 15, 1998).

On April 6, 1998, Pakistan first tested its nuclear-capable Ghauri (Hatk-5) medium-range ballistic missile (MRBM), which is based on the North Korean No Dong missile. U.S. intelligence was said to suspect that China Poly Ventures Company delivered, perhaps in 1999, U.S.-made specialized metal-working presses and a special furnace to Pakistan's National Development Center, a missile plant, reported the *Washington Times* (April 15, 1999). China reportedly was building a second missile plant and providing specialty steel, guidance systems, and technical aid, said the *Far Eastern Economic Review* (June 22, 2000) and *New York Times* (July 2, 2000). Apparently confirming these stories, the DCI reported in August 2000 that, besides North Korean help, PRC entities provided "increased assistance" to Pakistan's ballistic missile program in the second half of 1999. Also, China has assisted Pakistan with development of the Shaheen-2 two-stage, solid-fuel MRBM, reported *Jane's Defense Weekly* (December 13, 2000). DCI George Tenet confirmed U.S. concerns about such assistance in testimony on February 7, 2001, before the Senate Intelligence Committee, and in his February 2001 report on proliferation.

Despite the PRC's November 2000 missile nonproliferation pledge, in the first several months of 2001, a PRC company reportedly delivered 12 shipments of missile components to Pakistan's Shaheen-1 SRBM and Shaheen-2 MRBM programs, according to the *Washington Times* (August 6, 2001). On September 1, 2001, the State Department imposed sanctions on China Metallurgical Equipment Corporation (CMEC) for proliferation of missile technology (Category II items of the MTCR) to Pakistan. In April 2003, the DCI reported that, in the first half of 2002, PRC entities provided "significant" assistance to Pakistan's ballistic missile programs, including serial production of solid-fuel SRBMs (the Shaheen-1, Abdali, and Ghaznavi) and the Shaheen-2 MRBM.

Nuclear Technology Sales to Iran

Suspecting that Iran uses nuclear technology to build the technical infrastructure for its clandestine nuclear weapon program, Washington has urged Beijing (and Moscow) not to transfer any nuclear technology to Iran. In 1995, China suspended a sale of nuclear reactors to Iran. Showing Israeli influence, Prime Minister Benjamin Netanyahu publicly stated in August 1997 that PRC Vice Premier Li Lanqing said that China canceled plans to build the reactors.

However, there were other controversial PRC nuclear deals with Iran pointing to an Iranian nuclear weapon program. PRC technicians built a calutron, or electromagnetic isotope separation system, for enriching uranium at the Karaj nuclear research facility, according to "confidential reports" submitted to Iranian President Rafsanjani by his senior aides, according to the *London Sunday Telegraph* (as reported in the September 25, 1995 *Washington Times*). As reported, the PRC system was similar to the one used in Iraq's secret uranium enrichment program.

Secretary of Defense William Perry confirmed in an April 1996 report that “the Iranians have purchased an electromagnetic isotope separation unit from China.”⁹

The China Nuclear Energy Industry Corporation had plans to sell Iran a facility to convert uranium ore into uranium hexafluoride gas, which could be enriched to weapons-grade material, according to the *Washington Post* (April 17, 1995; June 20, 1996). Intelligence reports said that the deal proceeded with PRC nuclear experts going to Iran to build the new uranium conversion plant near Isfahan, reported the *Washington Times* (April 17, 1996). However, PRC civilian nuclear officials later indicated to the IAEA and U.S. officials that China would not transfer the uranium conversion facility, ostensibly because of Iran’s inability to pay, reported the *Washington Post* (November 6, 1996). China’s role as nuclear supplier may have been affected by Iran’s turn to Russian reactors. Also, China may have responded to concerns of Israel (a key supplier to China’s military).

China’s concerns about its standing with the United States were also important. State Department official Robert Einhorn told Congress that China canceled this deal but had provided Iran with a blueprint to build the facility, reported the *Washington Post* (September 18, 1997). On the eve of a U.S.-China summit in Washington in October 1997, PRC Foreign Minister Qian Qichen provided a secret letter to Secretary of State Madeleine Albright, promising not to begin new nuclear cooperation with Iran, after building a small nuclear research reactor and a factory to fabricate zirconium cladding to encase fuel rods in nuclear reactors, according to the *Washington Post* (October 30, 1997). U.S. officials said the projects would not be significant for nuclear proliferation.

After President Clinton signed certifications in January 1998 to implement the 1985 bilateral nuclear cooperation agreement, as promised at the 1997 summit, the *Washington Post* (March 13, 1998) reported that at a closed hearing of the Senate Foreign Relations Committee on March 12, 1998, Clinton Administration officials disclosed negotiations in January 1998 between the China Nuclear Energy Industry Corporation and Iran’s Isfahan Nuclear Research Center to provide “a lifelong supply” of hundreds of tons of anhydrous hydrogen fluoride (AHF), or hydrofluoric acid, under falsified documents about end-users. (The AHF chemical could be used to produce uranium hexafluoride used in uranium conversion facilities. AHF is also a precursor for the chemical weapon agent Sarin.) According to the press, after Washington protested, Beijing stopped the sale. The Administration argued that Beijing responded positively and that the chemical is controlled by the Australia Group and not on a nuclear control list. Later, an April 2, 1999 U.S. intelligence report was said to suggest that the China Non-metallic Minerals Industrial Import/Export Corporation “revived” negotiations with the Iranian Atomic Energy Organization on the construction of a plant to produce graphite (used as a moderator in some reactors), reported the *Washington Times* (April 15, 1999).

In a February 2001 report (on the first half of 2000), the DCI dropped an earlier observation that the 1997 pledge appeared to be holding. In testimony before the Senate Governmental Affairs Subcommittee on International Security, Proliferation,

⁹ Office of the Secretary of Defense, *Proliferation: Threat and Response*, April 1996.

and Federal Services on June 6, 2002, Assistant Secretary of State John Wolf stated concerns about possible PRC-Iranian interactions “despite China’s 1997 pledge to end its nuclear cooperation with Iran.” In testimony to Congress on February 11, 2003, DCI George Tenet pointed to China’s “firms” (rather than the government) and warned that they “may be backing away from Beijing’s 1997 bilateral commitment to forego any new nuclear cooperation with Iran.” The DCI reported in April 2003 that “some interactions,” in the first half of 2002, between PRC and Iranian entities “may run counter” to Beijing’s 1997 commitment and noted that PRC entities continued to work on the zirconium production plant at Isfahan (while dropping a reference to the research reactor).

An Iranian opposition group reported that Iranian front companies have procured materials from China (and other countries) for secret nuclear weapons facilities, while experts from China have worked at a uranium mine at Saghand and a centrifuge facility (for uranium enrichment) near Isfahan, reported the *Washington Post* (December 19, 2002 and February 20, 2003). Moreover, *Nucleonics Week* (February 27 and March 6, 2003) reported that Iran, since 2000, has been building a secret uranium enrichment plant at Natanz with technology for gas centrifuge enrichment from Pakistan (Khan Research Laboratories), a country that received nuclear weapons technology from China. Also, the IAEA found out in 2003 that, in 1991, China supplied Iran with 1.8 metric tons of natural uranium, reported *Nucleonics Week* (June 12, 2003).

Missile Technology Sales to Iran

Ballistic Missiles. The CIA found that China delivered dozens or perhaps hundreds of missile guidance systems and computerized machine tools to Iran sometime between mid-1994 and mid-1995, reported the *International Herald Tribune* (June 23, 1995). The November 21, 1996 *Washington Times* cited a CIA report as saying that China agreed in August 1996 to sell to Iran’s Defense Industries Organization gyroscopes, accelerometers, and test equipment, which could be used to build and test components for missile guidance. On the same day, the State Department would only say publicly that “we believe at this stage that, in fact, the Chinese are operating within the assurances they have given us.”

The *Washington Times* (September 10, 1997) cited Israeli and U.S. intelligence sources as saying that China Great Wall Industry Corp. (which markets satellite launches) was providing telemetry equipment used in flight-tests to Iran for its development of the Shahab-3 and Shahab-4 MRBMs (with ranges, respectively, of about 800 mi. and 1,250 mi.). Over 100 PRC and North Korean experts worked there, reported the *Washington Times* (November 23, 1997) and *Washington Post* (December 31, 1997). Citing a May 27, 1998 intelligence report, the June 16, 1998 *Washington Times* reported that, in May 1998, China discussed selling telemetry equipment (for testing missiles) to Iran. On July 22, 1998, Iran first tested the mobile Shahab-3 missile, which the Pentagon, on the next day, confirmed to be based on a North Korean Nodong MRBM. In Beijing in November 1998, Acting Undersecretary of State John Holum protested continuing PRC missile technology aid to Iran, including a reported shipment of telemetry equipment in November 1998, according to the *Washington Post* (November 13, 1998) and *Washington Times* (December 7, 1998). U.S. intelligence suspected continued PRC sales of missile

technology to Iran in 1999, including specialty steel, telemetry equipment, and training on inertial guidance, reported the *Washington Times* (April 15, 1999).

On November 21, 2000, under the AECA and EAA, the Clinton Administration announced it determined that PRC entities had transferred Category II items (missile components) to Iranian entities and U.S. sanctions would be waived on China given its new missile nonproliferation promise.

Still, the *Washington Times* (January 26, 2001) said that NORINCO (a PRC defense industrial firm) shipped specialty metals and chemicals used in missile production to Iran. On the national emergency regarding weapons proliferation, President Bush continued to report to Congress in June 2002 that PRC (and North Korean and Russian) entities “have continued to supply Iran with a wide variety of missile-related goods, technology, and expertise.”¹⁰ The report confirmed that the May 2002 sanctions under the Iran Nonproliferation Act of 2000 (P.L. 106-178) were imposed on three PRC entities for conventional transfers to Iran related to unspecified missiles. It also noted that the Administration did not impose new missile proliferation sanctions (under the AECA and EAA) between November 2001 and May 2002. (The Iran Nonproliferation Act authorizes sanctions on a foreign person based on “credible information” of a transfer to Iran (not necessarily a weapons program) of technology controlled by multilateral nonproliferation regimes. The AECA and EAA require sanctions based on a Presidential determination that a foreign entity “knowingly” transferred any MTCR missile equipment or technology to a program for an MTCR Category I missile.)

The DCI reported in April 2003 that, in the first half of 2002, PRC (and Russian and North Korean) entities continued to supply ballistic missile-related equipment, technology, and expertise to Iran. On May 23, 2003, the Administration imposed sanctions on NORINCO and Iran’s Shahid Hemmat Industrial Group, under Executive Order (E.O.) 12938 (as amended by E.O. 13094). According to U.S. officials, the Administration banned imports from NORINCO for two years (worth over \$100 million annually), because it transferred missile technology to Iran, even after the PRC issued missile technology export controls in August 2002, that would assist the development of medium- or long-range ballistic missiles, reported *Reuters* (May 22) and *Wall Street Journal* (May 23, 2003). E.O. 12938 requires sanctions if the Secretary of State determines that a foreign person has “materially contributed or attempted to contribute materially” to WMD or missile proliferation. Again on June 26, 2003, the Administration imposed sanctions under the Iran Nonproliferation Act on five PRC entities (including NORINCO) and one North Korean entity. The State Department noted that it added in the Act’s required report to Congress (a classified report was submitted on June 25) transfers of items that have the potential to make a “material contribution” to WMD, cruise missiles, or ballistic missiles, even if the items fall below the parameters of multilateral export control lists.

¹⁰ President Clinton declared the national emergency with respect to the proliferation of weapons of mass destruction in Executive Order 12938 on November 14, 1994. President George W. Bush, *Report to Congress on the Emergency Regarding Proliferation of Weapons of Mass Destruction*, June 18, 2002.

Anti-Ship Cruise Missiles. China sold land-, sea-, and air-launched anti-ship missiles to Iran, raising policy issues about imposing sanctions. In January 1996, Vice Admiral John Scott Redd, as Commander of the U.S. Fifth Fleet, first reported that China supplied to Iran C-802 anti-ship cruise missiles, as disclosed in the *Washington Times* (March 27, 1996). In 1997, General J.H. Binford Peay, Central Command commander, said that China transferred 20 patrol boats with 15 equipped with C-802 missiles, reported the *Washington Times* (January 29, 1997).

The C-802 is a subsonic (0.9 Mach) missile which has a range of 120 km. (75 mi.) and carries a 165 kg. (363 lb.) warhead. No international agreement bans transfers of anti-ship missiles, and the C-802 is not covered by the MTCR, which controls exports of ballistic and cruise missiles that can deliver 500 kg. warheads to 300 km. Nevertheless, some argued that the transfer violated the Iran-Iraq Arms Nonproliferation Act of 1992, which requires sanctions for transfers that contribute to Iranian or Iraqi efforts to acquire “destabilizing numbers and types of advanced conventional weapons” (including cruise missiles) or WMD. On April 10, 1997, Deputy Assistant Secretary of State for Nonproliferation Robert Einhorn testified that “especially troubling to us is that these cruise missiles pose new, direct threats to deployed U.S. forces.” Still, Einhorn contended that “the C-802 transfers that have occurred so far are not of a destabilizing number and type.” Arguments against sanctions were in part based on the case that anti-ship cruise missiles were not a new type of weapon in Iran’s arsenal; China previously transferred Silkworm anti-ship cruise missiles to Iran. Others in Congress and the Pentagon argued that U.S. sanctions should be imposed on China for the delivery of C-802 anti-ship cruise missiles to Iran, because they were “destabilizing” to the region.

According to *Reuters*, on June 17, 1997, Defense Secretary Cohen reported Iran had test-fired PRC air-launched, anti-ship cruise missiles. They were C-801 missiles fired from F-4 fighters. China Precision Machinery Import-Export Corporation (CPMIEC) markets air-launched anti-ship cruise missiles called C-801K and C-802K. The subsonic C-801K has a range of 50 km (31 mi). Cohen added that the U.S. military was watching very closely and has “the capability to defeat any weapon system that Iran might possess.” After seeking to clarify apparently vague PRC assurances made at the U.S.-China summit in October 1997, Defense Secretary Cohen said in Beijing on January 20, 1998, that the PRC President promised that China does not plan to transfer to Iran additional anti-ship cruise missiles, including those under contract, or technology to achieve over-the-horizon capability or indigenous production, reported *Reuters* (January 20, 1998). During another visit to China, Secretary Cohen said on July 10, 2000, that the PRC has “abided by that agreement” made in 1998 “as far as the shipment of cruise missiles to the Iranians.” In his January 2001 report on proliferation, Cohen did not mention China’s promises on Iranian cruise missiles.

U.S. intelligence reportedly believed that China already delivered perhaps 150 C-802 missiles to Iran, which then made additional C-802s using suspected French TRI-60 engines manufactured and sold by Microturbo SA to China beginning in 1987 and perhaps also to Iran in 1998, reported the *Washington Post* (April 3, 1999). Responding to U.S. diplomatic protests, Paris said that the French firm sold generators, not missile engines. The DCI reported in July 1999 that “China also was an important supplier of [advanced conventional munitions] to Iran through the

second half of 1998, but President Jiang Zemin pledged to cease supply of cruise missiles" [in January 1998]. The report did not say whether that pledge was holding. The *Washington Times* (August 19, 1999) cited intelligence reports as saying that China signed an \$11 million agreement to improve Iran's FL-10 anti-ship cruise missiles. The DCI's August 2000 report, on the second half of 1999, said that China (and others) helped Iran to develop its capability to produce conventional weapons, including PRC-designed anti-ship cruise missiles.

On May 9, 2002, the Bush Administration imposed sanctions on eight PRC entities, under the Iran Nonproliferation Act of 2000, for unspecified transfers. The *Washington Times* (May 17 and July 26, 2002) reported that Iran had acquired PRC patrol boats armed with anti-ship cruise missiles. Also, the *Washington Times* alleged on May 20, 2002, that three of the sanctioned PRC entities had transferred cruise missile components to Iran. These entities were reported to be: China Shipbuilding Trading Co., CPMIEC, and China National Aero-Technology Import and Export Corp., and they allegedly helped Iran to develop a new ground-launched anti-ship cruise missile with a range of about 310 miles. In June 2002, the President's report on weapons proliferation confirmed that three of the PRC entities sanctioned in May had engaged in "conventional weapons-related cooperation with Iran," but it did not specify whether the entities engaged in the proliferation of ballistic and/or cruise missiles.¹¹

On July 9, 2002, the Administration again imposed sanctions on China Shipbuilding Trading Co., this time under the Iran-Iraq Arms Nonproliferation Act of 1992 (P.L. 102-484) (in addition to eight PRC entities sanctioned for chemical weapons proliferation in Iran). It was the first use of this law. The sanctions on China Shipbuilding appeared to be for "knowingly and materially" contributing to the proliferation of destabilizing numbers and types of cruise missiles in Iran. The Administration did not apply sanctions to the PRC government.

The China Aerospace Science and Technology Corporation (CASC) was collaborating with Iran to produce C-701 and C-801 anti-ship cruise missiles, reported *Jane's Defense Weekly* (December 4, 2002). CASC is a defense-industry corporation under the PRC's State Council.

Chemical Sales to Iran

Concerning chemical weapons, the *Washington Post* of March 8, 1996, reported that U.S. intelligence, for over one year, was monitoring transfers of precursor chemicals and chemical-related equipment from China to Iranian organizations affiliated with the military or the Revolutionary Guards. According to the report, the equipment included glass-lined vessels for mixing the caustic precursors and special air filtration equipment to prevent poison gas leaks. Iran was also reportedly buying PRC technology for indigenous and independent production.

¹¹ President George W. Bush, *Report to Congress on the Emergency Regarding Proliferation of Weapons of Mass Destruction*, June 18, 2002.

Confirming long-suspected PRC transfers, on May 21, 1997, the Clinton Administration imposed sanctions on two PRC companies, five PRC citizens, and a Hong Kong company for transfers to Iran contributing to chemical weapon proliferation. U.S. sanctions, banning U.S. government procurement and imports, were imposed under the AECA and EAA, as amended by the Chemical and Biological Weapons Control and Warfare Elimination Act of 1991 (P.L. 102-182). However, the Administration did not impose sanctions under the Iran-Iraq Arms Nonproliferation Act of 1992 (affecting “persons” or “countries”), because the transfers apparently occurred before February 10, 1996, the date when provisions on WMD proliferation took effect, as amended by the FY 1996 National Defense Authorization Act (P.L. 104-106). Also, the State Department said that it had no evidence that the PRC or Hong Kong governments were involved.

An intelligence report was said to allege that China completed in June 1997 a plant in Iran for making glass-lined equipment used in producing chemical weapons, reported the *Washington Times* (October 30, 1997). The Nanjing Chemical and Industrial Group built the factory, and North Chemical Industries Corporation (NOCINCO) brokered the deal. (NOCINCO is affiliated with NORINCO, a defense-industrial firm.) However, the PRC government reportedly held up supplies of raw materials. The *London Daily Telegraph* (May 24, 1998) reported that SinoChem Corp.’s branch in Tianjin, China, supplied to Iran 500 tons of phosphorus pentasulphide (controlled by the AG for making nerve agents).

On June 14, 2001, the Bush Administration imposed sanctions under the Iran Nonproliferation Act of 2000 on Jiangsu Yongli Chemicals and Technology Import and Export Corporation (one of the two PRC companies sanctioned in 1997) for proliferation of chemical weapons-related materials or equipment to Iran. According to the *Washington Times* (June 28, 2001), the PRC company helped Iran to build a factory to manufacture dual-use equipment applicable to chemical weapons. Again, on January 16, 2002, the Administration imposed similar sanctions (for transfers of chemical and/or biological items controlled by the Australia Group) on Liyang Chemical Equipment Company, China Machinery and Electric Equipment Import and Export Company, and a PRC citizen (Chen Qingchang). Chen was also sanctioned in 1997. Sanctions were imposed for two years, but there was no economic effect because of the absence of U.S. government contracts, assistance, arms sales, or dual-use exports with/to such “persons.”

With those actions, the State Department did not impose sanctions under the AECA, EAA, or the Iran-Iraq Arms Nonproliferation Act, apparently because unlike those laws, the Iran Nonproliferation Act requires semi-annual reports to Congress and authorizes sanctions based on “credible information” that a person, since 1999, transferred to Iran items controlled by multilateral export control lists (NSG, MTCR, AG, CWC, or Wassenaar Arrangement). The Administration again imposed sanctions under the Iran Nonproliferation Act on May 9, 2002, and a Presidential report to Congress in June 2002 confirmed that five of the eight PRC entities were sanctioned for transferring AG-controlled items to Iran.¹² The *Washington Times*

¹² President George W. Bush, *Report to Congress on the Emergency Regarding*
(continued...)

(May 20, 2002) said that the transfers involved anti-corrosive glass-lined equipment to make chemical weapons and that NORINCO was sanctioned but not listed among the eight publicly named PRC entities.

On July 9, 2002, the Bush Administration imposed sanctions under the Iran-Iraq Arms Nonproliferation Act of 1992 (in the first use of this law), as well as the AECA and EAA (as amended by the Chemical and Biological Weapons Control and Warfare Elimination Act of 1991), on eight PRC entities (including those previously sanctioned) for “knowingly and materially” contributing to Iran’s chemical weapons program, according to the State Department. The Administration did not impose sanctions under the Iran-Iraq Act on the PRC government. The *Washington Times* (July 19, 2002) reported that the transfers took place between September 2000 and October 2001. The DCI’s April 2003 report said that, in the first half of 2002, Iran continued to seek chemicals, production technology, training, and expertise from PRC entities that could advance Iran’s efforts to produce nerve agents.

North Korea’s Missile and Nuclear Weapons Programs

Since 1998, there have been public reports about and U.S. government confirmation of PRC assistance to North Korea’s missile program. There are questions about whether the PRC has interests in North Korea’s missile advances. The PRC’s Lieutenant General Xiong Guangkai, a Deputy Chief of General Staff, visited North Korea in early August 1998, before the surprising test-firing of a three-stage, medium-range Taepo Dong 1 missile on August 31, 1998. However, increased worries about North Korea’s missile program spurred U.S. and Japanese support for missile defenses opposed by China. Some say PRC entities acted on their own.

The National Security Agency (NSA) reportedly suspected in late 1998 that the China Academy of Launch Vehicle Technology (CALT) was working with North Korea on its space program (closely related to missiles) to develop satellites, but that cooperation was not confirmed to be linked to the Taepo Dong MRBM program, said the *Washington Times* (February 23, 1999). An NSA report dated March 8, 1999, suggested that China sold specialty steel for use in North Korea’s missile program, reported the *Washington Times* (April 15, 1999). In June 1999, U.S. intelligence reportedly found that PRC entities transferred accelerometers, gyroscopes, and precision grinding machinery to North Korea, according to the *Washington Times* (July 20, 1999). An October 20, 1999 classified report was said to say that China’s Changda Corp. sought to buy Russian gyroscopes that are more of the same that China supplied to the North Korean missile program earlier that year, reported the *Washington Times* (November 19, 1999). In December 1999, the NSA discovered an alleged PRC deal to supply unspecified PRC-made missile-related items to North Korea through a Hong Kong company, said the *Washington Times* (January 1, 2000).

The DCI first publicly confirmed PRC supplies to North Korea in July 1999. The DCI’s April 2003 report said that, in the first half of 2002, North Korea continued to procure missile-related raw materials and components from foreign

¹² (...continued)

Proliferation of Weapons of Mass Destruction, June 18, 2002.

sources, but it dropped a previous reference about those foreign supplies as especially going through North Korean firms in China. There are direct implications for U.S. national security, especially with DCI George Tenet's confirmation that North Korea has a missile capable of striking the U.S. west coast, in testimony to the Senate Armed Services Committee on February 12, 2003.

PRC technology transfers have further implications for secondary, or retransferred, proliferation, since North Korea reportedly has supplied technology to Iran, Syria, Pakistan, Egypt, Libya, and Yemen. A serious case involves North Korea's secret program to enrich uranium to develop nuclear weapons, a program surprisingly acknowledged by North Korea during talks on October 4, 2002, but not publicly disclosed by the Bush Administration until October 16, 2002. The DCI previously reported that North Korea has another program that produced enough plutonium for one or two nuclear weapons, a program Pyongyang agreed to halt under the 1994 Agreed Framework. (See: CRS Issue Brief IB91141, *North Korea's Nuclear Weapons Program*, by Larry Niksch.)

This case raises a question about whether China's nuclear technology has indirectly contributed to North Korea's nuclear weapons program through Pakistan, since China was the "principal supplier" to Pakistan's nuclear weapons program. There are also questions about China's past or present knowledge about the Pakistani-North Korean trade and whether Beijing is sharing its intelligence with the United States. The *New York Times* and *Washington Post* reported on October 18, 2002, that U.S. officials believe Pakistan provided equipment, including gas centrifuges, for the North Korean uranium enrichment program, in return for North Korea's supply of Nodong MRBMs to Pakistan by 1998. Another *Washington Post* report added on November 13, 2002, that the Bush Administration has knowledge that Pakistan continued to provide nuclear technology to North Korea through the summer of 2002. Henry Sokolski of the Nonproliferation Policy Education Center wrote in *National Review Online* (November 19, 2002) that "one might call on Pakistan, Russia, and China to detail what nuclear technology and hardware they allowed North Korea to import." John Tkacik of the Heritage Foundation wrote in the *Asian Wall Street Journal* (December 2, 2002) that most in the U.S. intelligence community doubt China was "completely in the dark," as PRC President Jiang Zemin said at his summit with President Bush at Crawford, TX, in October 2002.

Moreover, there may be PRC firms directly involved in North Korea's nuclear weapons programs. The *Washington Times* reported on December 9 and 17, 2002, that a PRC company in the northeastern coastal city of Dalian sold to North Korea 20 tons of tributyl phosphate (TBP), a dual-use chemical that U.S. intelligence reportedly believe will be used in the North Korean nuclear weapons program.

There are also questions about China's role in allowing Pakistani, North Korean, and Iranian ships and planes to use PRC ports and airspace (and perhaps military airfields). China's possible cooperation in interdiction, restrictions in the use of its ports and airfields, and intelligence-sharing has become a salient question in light of the Bush Administration's Proliferation Security Initiative announced in May 2003. As part of the military trade between Pakistan and North Korea, in July 2002, Pakistan flew a C-130 transport aircraft to pick up missile parts in North Korea, reported the *New York Times* (November 24, 2002). In December 2002, the Spanish

and U.S. navies interdicted a North Korean ship with Scud missiles bound for Yemen, and the Spanish Defense Minister reported that the ship's last port of call was in China. In addition, an Iranian ship stopped at the Tianjin port in China and picked up missile components before sailing on to North Korea to take delivery of missiles and rocket fuel in February and November 2002, reported the South Korean newspaper, *Joong Ang Ilbo* (December 19, 2002). From April to July 2003, China reportedly gave overflight rights to Iranian Il-76 cargo planes that flew to North Korea at least six times to pick up wooden crates suspected of containing cruise missiles, and the Bush Administration lodged a diplomatic complaint with Beijing, reported *Time (Asian edition)* on July 14, 2003.

Since the Bush Administration's October 2002 disclosure about North Korea's ongoing nuclear weapons programs, it has sought China's cooperation in a multilateral effort — not simply bilateral talks as North Korea has demanded — to achieve the dismantlement of North Korea's nuclear weapons program. At the October 25, 2002 summit in Crawford, TX, President Jiang agreed with Bush on the objectives of a nuclear-free Korean peninsula, peace and stability, and a peaceful resolution. On January 10, 2003, when North Korea announced its withdrawal from the NPT, President Bush called Jiang, and the White House said that Bush was "pleased" with the extent of cooperation from China.

However, some have questioned whether China has been too restrained in using its leverage with North Korea. China appears to have additional concerns, including: (1) a preference for international sustainment of the North Korean regime rather than collapse (fearing instability, a massive influx of refugees, and the loss of a perceived buffer between China and U.S. forces); (2) fear of losing international standing in any snub from Pyongyang and appearances of limited PRC influence; and (3) questions about whether Beijing's support for Washington would result in limits in U.S. support for Taiwan in the longer term. On February 7, 2003, Bush said he had to "remind" Jiang of "joint responsibilities" in achieving common objectives concerning North Korea. Two days later, Secretary of State Colin Powell said in an interview on Fox News Sunday that China has "considerable influence with North Korea." Powell reported that North Korea depends on China for 80 percent of its energy and economic activity, and urged China to play an active role in the dispute.

On April 23-25, 2003, China hosted trilateral talks among China, North Korea, and the United States (without South Korea and Japan), and Secretary Powell said, "China has stepped up." On June 9, 2003, in Tokyo, Deputy Secretary of State Richard Armitage "saluted" China's cooperation on the problem of North Korea and declared "a new phase of our relationship with China." In mid-July 2003, PRC President Hu Jintao dispatched Deputy Foreign Minister Dai Bingguo to Pyongyang with a letter for Kim Jong-Il that proposed a multilateral meeting with U.S.-North Korean talks on the sidelines, reported the *New York Times* (July 16, 2003). On the same day, Secretary Powell asserted that "the diplomatic track is alive and well."

Missile Technology Sales to Libya

Beginning in 2000, public reports appeared on PRC assistance to Libya's missile program. The Defense Department discovered in December 1999 that the PRC had plans to build a hypersonic wind tunnel in Libya for missile design,

reported the *Washington Times* (January 21, 2000). A classified March 2, 2000 report by the NSA was said by the newspaper to describe the PRC's missile technology transfer to Libya that month, helping Libya to develop the Al Fatah SRBM with a range of 600 miles. CPMIEC allegedly began cooperating with Libya in March 1999, according to the *Washington Times* (April 13, 2000). The June 30, 2000 *Washington Times*, citing a classified NSA report, said that the PRC was training Libyan missile experts at the Beijing University of Aeronautics and Astronautics. Aside from wind tunnels, PRC assistance has also covered navigational and guidance systems, reported *Jane's Defense Weekly* (February 13, 2002). The DCI's August 2000 report publicly confirmed PRC missile assistance to Libya for the first time. The April 2003 report said assistance from PRC and other "entities" was "critical" to Libya's ballistic missile programs in the first half of 2002.

Missile Technology Sales to Syria

A Pentagon report in 2001 said that PRC firms, in addition to North Korean and Russian entities, contributed equipment and technology to Syria's liquid fuel missile program.¹³ However, while criticizing North Korean and Russian assistance to Syria's ballistic missile development, Under Secretary of State John Bolton did not cite PRC help at a speech at the Heritage Foundation on May 6, 2002. The DCI's public reports have not specified PRC assistance for Syria's missile program.

Policy Issues and Options

Weapons proliferation by the PRC and/or its companies raises policy issues concerning: (1) assessments of the nature and seriousness of the PRC government's role in the proliferation threat; (2) the priority of this issue relative to other U.S. interests (i.e., other security issues, Taiwan, trade, human rights); and (3) U.S. actions (including the Administration's use of sanctions and congressional oversight and enactment of legislation) to obtain China's cooperation in nonproliferation.

Successive Administrations have pursued a policy of "engagement" with Beijing. Some policymakers and advocates stress a cooperative approach. In 1998, President Clinton issued certifications to implement the 1985 Nuclear Cooperation Agreement. The Clinton Administration also encouraged the PRC to join the MTCR and proposed to allow more PRC satellite launches. In November 2000, the State Department agreed to waive sanctions and consider new satellite exports in return for a missile non-proliferation pledge from China. Some officials and experts cite PRC nonproliferation statements as signs that the United States has made progress in nonproliferation goals. Some also say that U.S. sanctions are counterproductive and are too broad. Rather, they note that China needs to recognize nonproliferation for its own national interests and develop stronger export controls, perhaps with U.S. assistance. Also, some stress that China would be more cooperative if brought in to draw up "the rules." Some stress that "entities" operate without the PRC

¹³ Office of the Secretary of Defense, *Proliferation: Threat and Response*, January 2001.

government's knowledge. (The DCI's January 2003 report to Congress noted that PRC entities could have continued contacts with Pakistani nuclear weapons facilities "without Beijing's knowledge or permission," but this comment was dropped from the April 2003 report.)

Critics argue that policy needs a tougher approach to counter China's activities that threaten U.S. security interests. They note that PRC weapons proliferation activities have continued and PRC assurances have proved to be unreliable. Also, they say that U.S. security interests are better served with a stronger approach to deter China's transfers, which may include appropriate sanctions. Some argue that the United States should not be "subsidizing" China's missile and nuclear industries. These proponents tend to see the U.S. position as stronger than China's. Some are skeptical that China sees nonproliferation as in its national interest, since Beijing has made progress in nonproliferation commitments as part of improving relations with Washington (in preparation for summits) and may use its sales as a form of leverage against Washington, especially on the issue of U.S. arms sales to Taiwan. They also doubt that trade in sensitive nuclear weapons and missile technology can continue without the knowledge of the PRC government and/or its military. They note that PRC export controls are weak, even as government repression can be harsh.

No matter what options are pursued, many argue that U.S. leadership and a forward-looking and credible strategy are needed for dealing with China's rising influence in world affairs. A strategic approach might underpin short-term responses to violations and use both positive and negative sources of leverage. Policy issues have often centered on summity, sanctions, and satellite exports.

Foreign and Defense Policies

Summits. After the downturn in U.S.-PRC relations because of the 1989 Tiananmen crackdown, the Clinton Administration resumed high-level exchanges in 1993 and argued that "comprehensive engagement" with China advances U.S. security goals, including nonproliferation. President Clinton granted Jiang Zemin summits in Washington, on October 29, 1997, and in Beijing, on June 29, 1998. Leading up to the 1997 summit, the Administration urged China to adopt "comprehensive, nationwide regulations on nuclear export control." China responded by implementing a set of regulations on nuclear export controls signed by Premier Li Peng on September 10, 1997. The regulations permit nuclear exports to only facilities under IAEA safeguards. China also joined the Zangger Committee (on nuclear trade) on October 16, 1997. Then, China issued new export control regulations on dual-use nuclear items on June 17, 1998. The 1998 summit in Beijing produced an agreement on non-targeting nuclear weapons, and joint statements on South Asia and on biological weapons. But China refused to join the MTCR, saying that it was "actively studying" whether to join.

President Bush raised the unresolved missile proliferation issue in Shanghai in October 2001 and in Beijing in February 2002. As Deputy Secretary of State Richard Armitage arrived in Beijing to discuss the Bush-Jiang summit in Crawford, TX, on October 25, 2002, China, on August 25, 2002, published the missile export control regulations promised in November 2000, along with a control list that is modeled on

the MTCR. In addition, on October 14, 2002, the PRC issued regulations for export controls over dual-use biological agents.

Counter-Terrorism Campaign. The terrorist attacks of September 11, 2001, added a compelling U.S. interest in considering U.S. policy on PRC weapons proliferation. With questions about the viability of Pakistan's government after it gave strong support to the anti-terrorism war, the United States could seek intelligence from the PRC about Pakistan's nuclear weapons as well as cooperation in not further adding to instability in South Asia. Also, the Bush Administration could maintain or strengthen its response to the proliferation problem, since PRC entities have reportedly transferred nuclear, missile, and/or chemical weapons technology to sponsors of terrorism (listed by the State Department), such as Iran, North Korea, and Libya. If the Administration lifts sanctions for cooperating countries, options include waiving proliferation sanctions on the PRC. (On China's role in counter-terrorism, see "*People's Republic of China*" in the CRS Terrorism Briefing Book, [<http://www.congress.gov;brbk/html/ebter67.html>], by Shirley Kan.)

In his January 29, 2002 State of the Union speech, Bush identified the two primary threats as terrorism and weapons proliferation. He then issued the National Security Strategy on September 20, 2002, warning:

The gravest danger our Nation faces lies at the crossroads of radicalism and technology. Our enemies have openly declared that they are seeking weapons of mass destruction, and evidence indicates that they are doing so with determination. The United States will not allow these efforts to succeed. We will build defenses against ballistic missiles and other means of delivery. We will cooperate with other nations to deny, contain, and curtail our enemies' efforts to acquire dangerous technologies. And, as a matter of common sense and self-defense, America will act against such emerging threats before they are fully formed. ...

Missile Defense and Counterproliferation. Some say that missile defense should play a critical role in the strategy to counter the proliferation threat. Others say the September 2001 attacks increased doubts about the likelihood of terrorists using missiles for weapons delivery. China has opposed U.S. deployment of missile defense systems and related cooperation with Japan or Taiwan and threatened to significantly increase its nuclear missile force. China is concerned that missile defense would spur an arms race, negate its deterrence capabilities, forge closer U.S.-Taiwan military cooperation, and violate the MTCR. During Defense Secretary William Cohen's visit to China in July 2000, the PRC reportedly warned that it would continue missile proliferation activities if the United States provides missile defense to Taiwan (*Washington Post*, July 12, 2000). Also, top PRC arms control official Sha Zukang warned that the PRC would withhold cooperation on arms control and weapons nonproliferation in response to U.S. deployment of NMD, reported the *Washington Post* (July 14, 2000). Others say that PRC proliferation activities and missile buildups would continue regardless.

On December 11, 2002, President Bush issued his National Strategy to Combat Weapons of Mass Destruction, resting on the three pillars of counterproliferation, nonproliferation, and response. The first pillar, counterproliferation, would include interdiction, deterrence, and defense (including preemptive measures and missile

defenses). On May 31, 2003, in Poland, President Bush announced the Proliferation Security Initiative to step up multinational efforts at interdiction and intelligence-sharing. The original 11 nations in the partnership do not include China, although China could be asked to cooperate, particularly in targeting North Korea.

However, obtaining China's cooperation in counterproliferation (e.g., interdiction of shipments, inspections, or information-sharing) may be difficult, given its long-lasting negative and emotional reaction to U.S. inspection in 1993 of the PRC ship, Yinhe, which was suspected of carrying chemicals for Iran. Also, China and other countries have greater doubts about the credibility of U.S. intelligence after the Bush Administration made its weapons nonproliferation claims for going to war against Iraq in 2003.

Export Control Assistance. The United States may provide assistance to strengthen China's export controls, including the areas of legislation, regulations, licensing, customs, border security, and law-enforcement. The Departments of Commerce and State testified to the Senate Governmental Affairs Subcommittee on International Security, Proliferation, and Federal Services on June 6, 2002, that such bilateral exchanges were very limited.

Linkage to the Taiwan Issue. China has tried to link the separate issues of missile proliferation and U.S. conventional arms sales for Taiwan's defense. Congress has exercised oversight of the Administration's response to any such linkage. During the 1998 summit in Beijing, the Clinton White House reportedly considered a PRC request for a U.S. pledge to deny missile defense sales to Taiwan, if China promised to stop missile sales to Iran; but no agreement was reached, reported the *Far Eastern Economic Review* (July 16, 1998). On February 26, 2002, before the Director General in charge of arms control at the PRC Foreign Ministry, Liu Jieyi, attended meetings in Washington on March 4-6, an unnamed PRC foreign ministry official told the *Associated Press* that the United States "can't just accuse us of violating our commitments and at the same sell large amounts of arms to Taiwan," since such arms sales are "also a kind of proliferation." The Administration has cited the Taiwan Relations Act (TRA) as committing the United States to provide defense articles and services for Taiwan's sufficient self-defense.

Economic Controls

Satellite Exports. There have been debates about U.S. policy using satellite exports to gain China's cooperation in missile nonproliferation. Since 1988, the policy of granting licenses to export satellites to China as well as Presidential waivers of post-Tiananmen sanctions (Section 902 of P.L. 101-246) have allowed satellites to be exported for launch by China Great Wall Industry Corp. (the same company sanctioned for missile proliferation) and — increasingly — for China's own use. In the Clinton Administration, the National Security Council, in a reported Secret memo on bilateral talks leading up to the 1998 summit (dated March 12, 1998, and printed in the March 23, 1998 *Washington Times*), proposed to expand space cooperation, increase the number of satellite launches, issue a blanket Presidential waiver of sanctions, and support China's membership in the MTCR — in return for PRC missile export controls. On November 21, 2000, the State Department said it would waive sanctions as well as resume processing — not necessarily approving —

licenses (suspended in February 2000) to export satellites to China and discuss an extension of the bilateral space launch agreement (expired at the end of 2001), in return for another PRC promise on missile nonproliferation. However, on September 1, 2001, the State Department imposed sanctions on a PRC company, the China Metallurgical Equipment Corporation (CMEC), for proliferation of missile technology to Pakistan, denying satellite exports to China. The last Presidential waiver for satellite exports to China was issued in February 1998. (See CRS Report 98-485, *China: Possible Missile Technology Transfers Under U.S. Satellite Export Policy — Actions and Chronology*, by Shirley Kan.)

Sanctions. Policy debates concerning PRC technology transfers have often centered on the questions of whether to impose unilateral sanctions under U.S. laws, to enact new legislation to tighten mandates for sanctions or reports, or to integrate the multiple laws. Also, there have been the issues of whether to target the PRC government or PRC “entities” (usually defense industrial organizations, like CPMIEC or NORINCO) and whether the PRC government lacks the will or the capability to enforce its stated nonproliferation policy. While certain PRC transfers may not violate any international treaties, sanctions may be required under U.S. laws that Congress passed to set U.S. nonproliferation policy and shore up nonproliferation treaties and standards. These laws, as amended, include: the Arms Export Control Act (AECA), Export Administration Act (EAA), Iran-Iraq Arms Nonproliferation Act of 1992, and Iran Nonproliferation Act of 2000. (On legislation requiring sanctions to address weapons proliferation, see CRS Report RL31502, *Nuclear, Biological, Chemical, and Missile Proliferation Sanctions: Selected Current Law*, by Dianne Rennack.)

Underlying the question of whether sanctions should be used are disagreements about the most effective approach for curbing dangerous PRC sales and promoting U.S. interests and leadership. Some argue that a cooperative approach, rather than sanctions, is more effective. Others say that current sanctions are not effective in countering the PRC’s proliferation practices (especially with certain entities being repeatedly sanctioned, negligible penalties, and sanctions targeting companies but not the government) and that legislation requiring sanctions should be toughened. Still others say current sanctions serve to stress the problem in certain countries, signal U.S. resolve, and shore up credibility on this important security issue.

As for whether to impose or waive missile proliferation sanctions, on November 21, 2000, the Clinton Administration agreed to waive missile proliferation sanctions, again process — not necessarily approve — licenses to export satellites to China, and discuss an extension of the bilateral space launch agreement, in return for a new PRC pledge on missile nonproliferation and a promise to issue missile export controls.

However, continued PRC transfers again raised the issue of imposing sanctions. By July 2001, the United States formally protested to China about its compliance with the agreement, reported the *Washington Post* (July 27, 2001). Visiting Beijing ahead of President Bush’s trip to Shanghai in October 2001, Secretary of State Colin Powell, on July 28, 2001, noted “outstanding issues” about China’s implementation of its November 2000 commitment.

On 8 occasions, the Bush Administration has imposed sanctions on PRC entities (not the government) for transfers (related to ballistic missiles, chemical weapons, and cruise missiles) to Pakistan and Iran, under the Arms Export Control Act, Export Administration Act, Iran Nonproliferation Act of 2000, Iran-Iraq Arms Nonproliferation Act of 1992, and Executive Order 12938. (For a summary, see the table, PRC Entities Sanctioned for Weapons Proliferation, at the end of this CRS Report.)

Robert Einhorn, former Assistant Secretary of State for Nonproliferation in the Clinton Administration, criticized the Bush Administration's approach on sanctions. "Sanctions are used, but they are usually simply imposed rather than used as a vehicle for trying to leverage better behavior. ... There seems to be no real strategy today to try to promote continued improvement in China's nonproliferation record," Einhorn wrote in the April 2, 2003 issue of *National Interest*.

Among the actions, on September 1, 2001, the Bush Administration imposed sanctions (for 2 years) on a PRC company, the China Metallurgical Equipment Corporation (CMEC), for proliferation of missile technology (Category II items) to Pakistan. The sanctions had the effect of denying licenses for two years for the export of satellites to China for its use or launch by its aerospace entities, because the Category II sanctions deny U.S. licenses to transfer missile equipment or technology (MTCR Annex items) to any PRC "person," which is defined by the so-called Helms Amendment (section 74(a)(8)(B) of the AECA) as any PRC government activity related to missiles, electronics, space systems, or military aircraft, and the State Department considers that satellites are covered by the MTCR Annex (since it includes satellite parts). In Beijing with the President in February 2002, National Security Advisor Condoleezza Rice said that the PRC should stop "grandfathering" contracts signed before November 2000.

On August 25, 2002, the PRC published missile export control regulations (promised in November 2000), just before Deputy Secretary of State Richard Armitage arrived in Beijing to discuss an upcoming Bush-Jiang summit, showing that China still viewed nonproliferation in the context of relations with the United States. Armitage welcomed the new regulations but added that further discussions were needed. The State Department spokesperson stressed that questions remained about enforcement of the controls and reductions in PRC proliferation practices. With U.S. questions about the enforcement and effectiveness of the controls, President Bush has not waived the sanctions imposed in September 2001.

Moreover, the regulations raise a number of questions, including the roles of the Ministry of Foreign Trade and Economic Cooperation (MOFTEC) and Ministry of Foreign Affairs. Part 1 of that control list (missiles and other delivery systems) and dual-use items (in Part 2) for military use are subject to the Regulations on Administering Arms Exports issued in 1997, under the jurisdiction of the State Council and Central Military Commission (China's military command). Also, unlike the MTCR, the PRC's regulations on missile-related exports do not state a strong presumption to deny transfers of Category I items or any missiles or other items judged to be intended to deliver any WMD.

In the 107th Congress, Senator Thompson inserted a section in the FY2003 National Defense Authorization Act (enacted on December 2, 2002, as Section 1209 in P.L. 107-314) to require the DCI to submit semi-annual reports that identify PRC and other foreign entities contributing to weapons proliferation. However, in signing the legislation, President Bush stated that he would construe this and several other sections in a manner consistent with the President's constitutional authority to withhold information, if disclosure could harm foreign relations, national security, or the Executive Branch's duties.

Capital Markets. During the 106th Congress, in May 2000, Senator Thompson, along with Senator Torricelli, introduced S. 2645, the "China Nonproliferation Act," to require annual reviews (based on "credible information"), sanctions, and use of the U.S. securities market as a policy tool. (In September 2000, the Senate passed (65-32) a motion to table the legislation as an amendment to the bill granting China permanent normal trade relations (PNTR) status.)

In the 107th Congress, Senator Thompson inserted a section in the FY2003 Intelligence Authorization Act (enacted on November 27, 2002, as Section 827 in P.L. 107-306) to require the DCI to submit annual reports on PRC and other foreign companies that are involved in weapons proliferation and raise funds in U.S. capital markets. Reporting the bill on May 13, 2002, the Senate Intelligence Committee (in S.Rept. 107-149) added that it did not intend to restrict access to those markets.

In the 108th Congress, the Senate's FY2004 Intelligence Authorization Act (S. 1025, passed as **H.R. 2417** on July 31, 2003) included Section 339(f) to repeal the above reporting requirement (Section 827 of P.L. 107-306).

Nuclear Cooperation Agreement. After the PRC promised not to start new nuclear cooperation with Iran on the eve of the 1997 U.S.-China summit, President Clinton, on January 12, 1998, signed certifications (as required by P.L. 99-183) on China's nuclear nonproliferation policy and practices to implement the 1985 Nuclear Cooperation Agreement. According to President Clinton, the agreement serves U.S. national security, environmental, and economic interests, and "the United States and China share a strong interest in stopping the spread of weapons of mass destruction and other sophisticated weaponry in unstable regions and rogue states — notably, Iran." The President also waived a sanction imposed after the Tiananmen crackdown (in P.L. 101-246). Later, at the 1998 summit, the Department of Energy (DOE) and the PRC State Planning Commission signed an agreement on peaceful nuclear cooperation, including bringing PRC scientists to U.S. national laboratories, universities, and nuclear reactor facilities.

During debate on the agreement, some in Congress, the nonproliferation community, and elsewhere were skeptical that PRC policies changed sufficiently to warrant the certifications and that they served U.S. interests. They also pointed out that China had not yet joined the Nuclear Suppliers Group. Congressional review ended on March 18, 1998, and the agreement has since been implemented. U.S. firms may apply for Export-Import Bank financing and licenses from the Nuclear Regulatory Commission (NRC) and DOE to export nuclear technology to China, and foreign firms may apply to re-export U.S. technology. Some Members pursued several options to affect the agreement's implementation. On November 5, 1997, the

House passed a bill with an amendment sponsored by Rep. Gilman, chairman of the Committee on International Relations, to extend congressional review for implementation of the agreement from 30 to 120 days and provide for expedited review procedures. As amended by Rep. Gilman, the National Defense Authorization Act for FY1999 (P.L. 105-261) requires the President to notify Congress “upon” granting licenses for nuclear exports to a non-NATO country that has detonated a nuclear explosive device (e.g., China).

However, *Nucleonics Week* (March 23, 2000) and the *Washington Times* (May 9, 2000) reported that the Clinton Administration had not obtained from China an overall assurance that it will not re-export U.S. technology to another country, such as Pakistan, thus affecting the issuance of export licenses. As required, the State Department, on June 9, 2000, issued the first notification to Congress that NRC issued a license on February 3, 2000, for the export of tantalite ore to China. The Administration issued this and subsequent licenses based on case-by-case assurances from Beijing of no re-transfers.

U.S. Import Controls. While sanctions may affect U.S. exports, some policy steps may affect imports of products produced by PRC military or defense-industrial companies suspected of contributing to proliferation. Import controls have been included as possible sanctions for missile proliferation under Section 73(a)(2)(C) of the AECA and Section 11B(b)(1)(B)(iii) of the EAA, as well as affected by what is popularly called the “Helms Amendment,” giving a broad definition of “person” as a target of sanctions. Issues include whether to sanction imports and what the parameters should be.

U.S. Export Controls. Export controls are a possible policy tool, because U.S. technology provides one source of leverage with respect to Beijing. After the Cold War, U.S. export restrictions have been re-focused to the threat of WMD and missiles. Some in Congress are concerned about U.S. technology reaching hostile states with WMD programs through China. U.S. arms sales to China have been banned under sanctions imposed after the 1989 Tiananmen Crackdown (in the Foreign Relations Authorization Act for FY1990-1991, P.L. 101-246), but there are competing economic interests in exporting dual-use technology.

Nonproliferation and Arms Control

Nonproliferation Regimes. Another policy approach is to strengthen the international nonproliferation regimes. There are two prongs in such efforts: (1) encouraging PRC support for strengthening the regimes (e.g., the IAEA’s verification authority) to enforce compliance and (2) filling gaps in China’s participation. Some say that efforts to include China would capitalize on its desire to be treated as a “great power” and to be perceived as a responsible world leader. In addition, they stress that China would be more cooperative if it helped to draw up the “rules.” Others argue that China’s participation would risk its obstruction of tighter export controls, possible derailing of arms control efforts, linkage of nonproliferation issues to the Taiwan issue, and access to intelligence-sharing. One basis for this view is the experience with the Arms Control in the Middle East effort in the early 1990s, in which China refused to cover missiles in the effort and later suspended its participation after President Bush decided in 1992 to sell Taiwan F-16 fighters.

The United States and others might encourage China to join the MTCR (as a member after it establishes a record of compliance and effective export controls), Nuclear Suppliers Group (NSG), Australia Group (on chemical and biological weapons), Wassenaar Arrangement (military and dual-use export controls), and International Code of Conduct Against Ballistic Missile Proliferation. Previously, President Clinton's National Security Council, in a reported Secret memo, dated March 12, 1998 (printed in the March 23, 1998 *Washington Times*), proposed in a "China missile deal" to expand space cooperation with Beijing, increase the number of satellites that China can launch, issue a blanket Presidential waiver of post-Tiananmen sanctions on satellite launches, and support China's membership in the MTCR — in return for effective PRC missile export controls.

Critics say that membership in the MTCR would exempt China from certain sanctions, provide it with intelligence, give it a potentially obstructionist role in decision-making, and relax missile-related export controls to China. In September 1999, Congress passed the FY2000 National Defense Authorization Act (P.L. 106-65), stating its sense that the President shall take steps to obtain an agreement with the PRC on adherence to the MTCR and its annex and that the PRC should not be allowed to join the MTCR without meeting certain conditions. It also required a report on the PRC's adherence to the MTCR. The classified report was submitted on August 18, 2000.

China joined the Zangger Committee (on nuclear trade) in October 1997, before a summit in Washington. Also, China issued new export control regulations on dual-use nuclear items on June 17, 1998, before another summit in Beijing. But China is the only major nuclear supplier to shun the 40-nation NSG, which requires "full-scope safeguards" (IAEA inspections of *all* other declared nuclear facilities in addition to the facility importing supplies to prevent diversions to weapon programs).

CTBT and Fissile Materials Production. China, on July 30, 1996, began a moratorium on nuclear testing and signed the CTBT on September 24, 1996. However, after the U.S. Senate rejected (51-48) the treaty on October 13, 1999, it became doubtful that the PRC would ratify the CTBT. Also, the United States has sought PRC cooperation on negotiating a global ban on the production of fissile materials for nuclear weapons and other nuclear explosive devices. On October 4, 1994, the United States and China agreed to "work together to promote the earliest possible achievement of a multilateral, non-discriminatory, and effective verifiable convention" banning fissile materials production.

International Lending and Japan

Congress may seek to link U.S. support for loans made by international financial institutions to China's nonproliferation record. The Iran-Iraq Arms Nonproliferation Act requires U.S. opposition to multilateral loans for sanctioned countries (Section 1605(b)(2)). Coordination with Japan is important, since it provides the most significant bilateral aid to China and, in 1995, was the only country to cut aid to pressure China to stop nuclear testing.

Table: PRC Entities Sanctioned for Weapons Proliferation

Entity/Person	Reason: Statutes	Dates
-China Great Wall Industry Corporation -China Precision Machinery Import/Export Corp. (CPMIEC)	Missile Proliferation: §73(a)(2)(A), Arms Export Control Act §11B(b)(1)(B)(i), Export Administration Act (Category II items in MTCR Annex to Pakistan)	June 25, 1991 waived on March 23, 1992
Ministry of Aerospace Industry, including CPMIEC, and related entities, including: - China National Space Administration - China Aerospace Corp. - Aviation Industries of China - CPMIEC - China Great Wall Industry Corp. or Group - Chinese Academy of Space Technology - Beijing Wan Yuan Industry Corp. (aka Wanyuan Company or China Academy of Launch Vehicle Technology) - China Haiying Company - Shanghai Astronautics Industry Bureau - China Chang Feng Group (aka China Changfeng Company)	Missile Proliferation: §73(a)(2)(A), Arms Export Control Act §11B(b)(1)(B)(i), Export Administration Act (Category II items in MTCR Annex to Pakistan)	August 24, 1993 waived on Nov. 1, 1994

Entity/Person	Reason: Statutes	Dates
<p>5 PRC citizens:</p> <ul style="list-style-type: none"> - Liao Minglong - Tian Yi - Chen Qingchang (aka Q.C. Chen) - Pan Yongming - Shao Xingsheng <p>2 PRC companies:</p> <ul style="list-style-type: none"> - Nanjing Chemical Industries Group - Jiangsu Yongli Chemical Engineering and Technology Import/Export Corp. <p>1 Hong Kong company:</p> <ul style="list-style-type: none"> - Cheong Yee Ltd. 	<p>CW Proliferation:</p> <p>§81(c), Arms Export Control Act</p> <p>§11C(c), Export Administration Act</p> <p>(dual-use chemical precursors, equipment, and/or technology to Iran)</p>	May 21, 1997 remain in effect
Jiangsu Yongli Chemicals and Technology Import/Export Corp.	<p>CW/BW Proliferation:</p> <p>§3, Iran Nonproliferation Act</p>	June 14, 2001 for 2 years
China Metallurgical Equipment Corp. (aka CMEC, MECC)	<p>Missile Proliferation:</p> <p>§73(a)(2)(A), Arms Export Control Act</p> <p>§11B(b)(1)(B)(i), Export Administration Act</p> <p>(MTCR Category II items to Pakistan)</p>	Sept. 1, 2001 for 2 years
<p>-Liyang Chemical Equipment</p> <p>-China Machinery and Electric Equipment Import/Export Co.</p> <p>-Q.C. Chen</p>	<p>CW/BW Proliferation:</p> <p>§3, Iran Nonproliferation Act</p> <p>(Australia Group controls)</p>	Jan. 16, 2002 for 2 years

Entity/Person	Reason: Statutes	Dates
<ul style="list-style-type: none"> -Liyang Yunlong (aka Liyang Chemical Equipment Co.) -Zibo Chemical Equipment Plant (aka Chemet Global Ltd.) -China National Machinery and Electric Equipment Import and Export Co. -Wha Cheong Tai Co. -China Shipbuilding Trading Co. -CPMIEC -China Aero-Technology Import and Export Corp. -Q.C. Chen 	<p>Weapons Proliferation: §3, Iran Nonproliferation Act (AG-controlled items and conventional weapons-related technology related to unspecified missiles)</p>	May 9, 2002 for 2 years
<ul style="list-style-type: none"> -Jiangsu Yongli Chemicals and Technology Import Export Corp. -Q.C. Chen -China Machinery and Equipment Import Export Corp. -China National Machinery and Equipment Import Export Corp. -CMEC Machinery and Electric Equipment Import Export Co. -CMEC Machinery and Electrical Import Export Co. -China Machinery and Electric Equipment Import Export Co. -Wha Cheong Tai Co. -China Shipbuilding Trading Co. 	<p>Weapons Proliferation: §1604(b), Iran-Iraq Arms Non-Proliferation Act and §81(c), Arms Export Control Act §11C(c), Export Administration Act (chemical weapons technology to Iran)</p> <p>only under Iran-Iraq Arms Nonproliferation Act (cruise missile technology)</p>	July 9, 2002 for 2 years for 1 year
North China Industries Corporation (NORINCO)	Missile Proliferation: Executive Order 12938 (amended by Executive Order 13094) (missile technology to Iran)	May 23, 2003 for 2 years

Entity/Person	Reason: Statutes	Dates
-Taian Foreign Trade General Corporation -Zibo Chemical Equipment Plant -Liyang Yunlong Chemical Equipment Group Company -NORINCO -CPMIEC	Missile Proliferation: §3, Iran Nonproliferation Act	June 26, 2003 for 2 years
CPMIEC	Missile Proliferation: Executive Order 12938 (missile technology to publicly unnamed country)	July 30, 2003 for indefinite period

Note: This table summarizes the discussion of sanctions in this CRS Report and was compiled based on publication of notices in the *Federal Register*, reports and statements of the Administration, legislation enacted by Congress, and news reports.